

SHMANENKOV, N.A., professor.

"Self-treatment" of cattle against insects; from observations made in the
U.S.A. Veterinariia 33 no.7:92-93 J1 '56. (MLRA 9:9)
(United States--Cattle--Diseases and pests)(Insects, Injurious and bene-
ficial)

USSR / Farm Animals. General Problems

Q-1

Abs Jour : Ref Zhur-Biol., No 6, 1958, 26098

Abstract : contains 1 liter of the preparation per 6.5 liters of water.
To preserve one ton of corn fodder, 30-50 liters of working
solution must be used.

Card 2/2

COUNTRY : USSR
 CATEGORY : Farm Animals.
 General Problems.
 ABS. JOUR. : RZhBiol., No. 3 1959, No. 11950
 : Simanenko, M. A.; Terenov, M. T.; Gaidarov,
 : -
 TITLE : Feeding Cows and Horses with Fodder Preserved
 by Mineral Acids.
 ORIG. PUB. : Vestn. s.-kh. nauki, 1958, No 2, 59-72
 ABSTRACT : By preserving fodder with acid preparations,
 the retention of nutritive substances and
 vitamins is largely assured. When feeds which
 were preserved with K2 and AIV preparations
 were fed to animals in quantities correspond-
 ing to the usual silage norms, an adverse
 effect on the animals condition and production
 was not established. Mares digested rations
 containing preserved feeds not less well than
 nutritive substances contained in the usual
 rations and young animals digested them even
 1/3
 Auth: *v. M.; Chalyuk, Ye. A.; Mel'nikova, T. S.;
 Kostromina, V. P.; Marina, E. A.

CODE/REF :
CATEGORY :

ADD. JOUR. : RZKPIol.. No. 1959, No.

ISSUE :
VOL. :
TITLE :

ORIG. PUB. :

ABSTRACT : logical state was not observed in experimental animals. The acid-alkali balance was within the norm if 4-5 g of chalk per 1 kg of preserved feeds were given. The milk's acidity tended to become increased. -- A. D. Masin

Page:

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SEMANENKOV, N., prof.; TARANOV, M., kand. biolog. nauk

Miraculous powder. Nauka i pered. op. v sel'khoz. 9 no. 7: 42-43
Jl '59. (MIRA 12:11)
(Grain--Storage) (Sodium pyrosulfite)

SHMANENKOV, N.A., prof., doktor biolog.nauk, red.; KARTASHEVA, N.M., red.;
ANTONOVA, N.K., kmd.-tekhn.red.

[Chemical preservation of green forage] Khimicheskoe konserviro-
vanie zelenykh kormov. Pod obshchai red. N.A.Shmanenkova. Moskva,
Izd-vo M-vo sel'.khoz.SSSR, 1960. 106 p.

(MIRA 14:1)

1. Vsesoyuznaya akademiya sel'skokhozyaystvennykh nauk imeni V.I.
Lenina. 2. Vsesoyuznyy nauchno-issledovatel'skiy institut kone-
vodstva (for Shmanenkov).

(Feeds--Preservation)

SHMANENKOV, Nikolay Aleksandrovich

[Using urea in livestock raising] Ispol'zovanie mocheviny v
zhivotnovodstve. Moskva, Gos. izd-vo sel'khoz. lit-ry, 1960.
111 p. (MIRA 14:10)

(Urba) (Feeding and feeding stuffs)

AZIMOV, G.I., prof., zasluzhennyy deyatel' nauki; SHMANENKOV, N.A., prof.;
MEDVEDEV, I.K., kand. biologicheskikh nauk

All-Union Scientific Research Institute of the Physiology and
Biochemistry of Farm Animals. Zhivotnovodstvo 23 no.3:78-80
Mr '61. (MIRA 17:1)

SINANENKOV, N.A., prof., red.; GRONOVA, A.V., red.

[Use of chemical substances in animal husbandry; a practical guide] Primenenie khimicheskikh veshchestv v zhivotnovodstve; prakticheskoe rukovodstvo. Moskva, Kolos, 1964. 218 p. (MIRA 18:3)

67603

SOV/179-59-5-25/41

10.4000
AUTHOR: Shmanenkov, V. N. (Moscow)

TITLE: On the Propagation of Small Disturbances in a Viscous
Layer on a Wall

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh
nauk, Mekhanika i mashinostroyeniye, 1959, Nr 5,
pp 132-133 (USSR)

ABSTRACT: A viscous layer of thickness Δ on a wall is a part
of a turbulent boundary layer δ_n thick. Their equations
are defined as:

$$\delta_n = \frac{ay}{\sqrt{\tau_0/\rho}}, \quad \Delta \sim \delta_n^{-1/2} \quad \left(R = \frac{U_{\max} \delta}{\nu} \right)$$

where τ_0 - tension due to friction, ν - kinematic
viscosity, a - characteristic constant, δ - thickness
of the layer at the transition point. It can be assumed
that the flow of liquid in these conditions is expressed
by the linear velocity equation, $U = ky$. The small
pulsations of the velocity can be considered as independent
oscillations with λ wavelength which propagates with
phase velocity c . The stream function in this case will

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SOV/179-59-5-25/41

On the Propagation of Small Disturbances in a Viscous Layer on a Wall

be defined as $u(x, y, t) = \varphi(y) \exp[i\alpha(x - ct)]$, where $\varphi = \varphi_r + i\varphi_i$ - complex amplitude, $\alpha = (2\pi/\lambda)$ - waving number. Thus, the formula (1) can be derived for the layer Δ , where b' - parameter of disturbance. The index n can be related to R in Eq (1), i.e. it is taken as $n = 1/2$. The Orr-Sommerfel'd equation (2) can be applied in this case as Eq (3), the solution of which can be found from the Hankel function tabulated by Titenson and given by Holstein (Ref 2). The following conditions were applied in the calculations:

1) the tangential turbulent frictions are taken as equal, i.e. $\tau' = -\rho u'v' = \mu dU/dy$;

2) the ratio u'/v' is equal to $O(R^{1/2})$.

The character of the function $\varphi_r d\varphi_i/dy - \varphi_i d\varphi_r/dy$ is shown in the Figure, where the curves are derived for different α given for equal parameters R, k, c . These curves show that in the viscous layer on a wall the magnitude of τ' decreases rapidly towards the wall, where the turbulent friction becomes negligible. Also τ' decreases

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SOV/179-59-5-25/41

On the Propagation of Small Disturbances in a Viscous Layer on
a Wall

with an increase of α which can be explained by the
damping of disturbances near the wall.

There are 1 figure and 2 references, 1 of which is
Soviet and 1 German.

SUBMITTED: June 27, 1959

Card 3/3

S/040/60/024/02/005/032

AUTHORS: Dem'yanov, Yu. A., Shmanenkov, V. N. (Moscow)

TITLE: On the Investigation of Back Currents in the Domain of Separation of the Turbulent Boundary Layer

PERIODICAL: Prikladnaya matematika i mekhanika, 1960, Vol. 24, No. 2
pp. 237-239

TEXT: The authors consider flows in the domain of separation of a supersonic turbulent boundary layer; especially the supersonic flow of a step (plane problem) and of a truncated body with superposed needle (axial symmetric problem). The experimental results from (Ref.2) indicate the existence of back currents near the wall in the brake zone for negligibly small pressure gradient, and an intensive intermixture in the brake zone. These facts cause the authors to investigate the considered processes within the theory of free turbulence. The brake zone is understood as the zone of turbulent intermixture of a semi-infinite free ray. Thus the authors succeed in considering the occurrence of back currents in the brake zones. The aperture angles of the brake zone calculated by the authors coincide with the experimental

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S/040/00/024/02/005/032

On the Investigation of Back Currents in the Domain of Separation of
the Turbulent Boundary Layer

results (Ref.1). The consideration is restricted to incompressible
fluids.

There are 2 figures, and 2 non-Soviet references: 1 American and 1
English.

SUBMITTED: November 27, 1959

Card 2/2

L 61707-65 EWT(d)/EWT(1)/EWP(m)/EWT(m)/EWP(w)/EWA(d)/EWP(v)/EPR/EWP(k)/FCS(k)/
EWA(h)/EWA(c)/EWA(1) Pd-1/Pf-4/Peb/P1-4 WW/EM
ACCESSION NR: AP5016247 UR/0373/65/000/003/0187/0189

AUTHORS: Dem'yanov, Yu. A. (Moscow); Shmanenkov, V. N. (Moscow)

TITLE: An approximate method of calculating the ground pressure for spherically shaped bodies

SOURCE: AN SSSR. Izvestiya. Mekhanika, no. 3, 1965, 187-189

TOPIC TAGS: ^{gm} pressure measurement, pressure profile, shock wave boundary layer, shock wave formation, supersonic boundary layer, approximation calculation, conical body

ABSTRACT: An approximate method is presented for calculating the ground pressure from the supersonic flight of spherically shaped bodies. The results of studies in this general field by several other authorities have been applied to this problem to determine the best numerical solution. The pressure arises from the shock wave which is generated at the point where the boundary layer breaks away from the body's surface. The shock wave problem is analogous to a supersonic spray jet. The flow breakdown behind the body and the shock wave arising in the zone of minimum cross section of the track are similar to those for a conical body. Experiments have shown that the pressure on the body and at one caliber from the track can be assumed constant. The pressure drop is associated with the interaction of the shock wave

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ACCESSION NR: AP5016247

and the boundary layer. The Mach and Reynolds numbers enter into consideration. The result of an isentropic flow of an ideal gas applies to the problem. For the second approximation, the local values of the viscosity effect must be included. Both laminar and turbulent boundary layers are analyzed. The shock wave flow is assumed to be independent of the frontal surface of the body. No satisfactory theory exists for the problem, and semi-empirical methods must suffice. A simplified scheme for treating experimental data was inspected. For axisymmetrical flows the use of previous data with an interpolation expression results in a solution for the turbulent boundary layer problem, but the laminar problem requires further study. A body of any shape can be similarly studied from the information concerning the gas flow in front of the shock wave. Calculations for the simplest case (a sphere) are presented and correlated with experimental values. An analysis of previous data (based on shadow photographs) gave a qualitative verification of the results, but quantitative analysis was not possible, since one study applied to a turbulent boundary layer and the other to a laminar one. Orig. art. has: 3 figures and 3 formulas.

ASSOCIATION: none

SUBMITTED: 04Jun64

ENCL: 00

SUB CODE: ME

NO REF SOV: 006

OTHER: 002

Card 2/2 *ce*

MIKHEYEV, N.B.; SHMANENKOVA, G.I.

Thermodynamic study of the cocrystallization of potassium
and rubidium chlorides from organic solvents. Zhur. neorg.
khim. 10 no.1:244-250 Ja '65. (MIRA 18:11)

1. Submitted Aug. 16, 1963.

MIKHEYEV, N.B.; SHMANENKOVA, G.I.

Cocrystallization of ionic compounds from organic solvents.
Dokl. AN SSSR 153 no.3:601-604 N '63. (MIRA 17:1)

1. Institut biofiziki Ministerstva zdravookhraneniya SSSR.
Predstavleno akademikom V.I. Spitsynym.

L 05131-0/ EWP(M)/EWP(L)/BFI IJP(c) JD/JG

ACC NR: AP6027737

SOURCE CODE: UR/0020/66/169/004/0882/0883

AUTHOR: Mikheyev, N. B.; Shmanenkova, G. I. 66
B

ORG: Biophysics Institute, Ministry of Health, SSSR (Institut biofiziki Ministerstva zdравookhraneniya SSSR)

TITLE: Adsorption of cesium and rubidium on ammonium chloride from solutions in organic solvents

SOURCE: AN SSSR. Doklady, v. 169, no. 4, 1966, 882-883

TOPIC TAGS: cesium, rubidium, adsorption, ammonium compound, chloride

ABSTRACT: The kinetics of adsorption of cesium and rubidium from alcohol and aqueous acetone solutions on finely divided NH_4Cl were studied by means of the radioisotopes Rb^{86} and Cs^{137} . The adsorption of Cs is expressed by the equation for adsorption kinetics on homogeneous surfaces, $\ln(C-C_\infty) = \ln(C_0-C_\infty)$, where C_0 is the initial Cs concentration, k a constant, C the concentration of the radioisotope at time t and C_∞ its concentration when the adsorption equilibrium has been reached. The adsorption kinetics of Rb are more complex in character: the adsorption is fastest in the beginning, then slows down and increases again toward the end of the process. To elucidate this behavior, the reversibility of the adsorption of Cs and Rb on NH_4Cl was studied, and it was found that Cs is adsorbed reversibly and Rb partly irreversibly. The adsorption is thought to occur on centers of at least two types: on the first type, Rb is ad-

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UDC: 546.36'131+546.35'131

L 05131-67

ACC NR: AP6027737

reacted rapidly and reversibly, and on the second, more slowly and to a large degree irreversibly. On the contrary, Cs is adsorbed only on centers of the first type, so that its adsorption is reversible. A study of the cocrystallization of Pb and Cs with NH₄Cl led to the conclusion that the course of the cocrystallization is not determined by the entire adsorption process but only by its fast stage. The paper was presented by Academician Spitsyn, V. I., 18 May 65. Orig. art. has: 2 figures.

SUB CODE: 07/ SUBM DATE: 13 May 65/ ORIG REF: 003/ OTH REF: 001

ms
Card 2/2

L 05831-67

ACC NR: AP6030021

solvent. It was found that the adsorption of rubidium on both stationary phases was to a great degree irreversible. This irreversibility increased the adsorption duration. For 155 minute adsorption duration, the separation coefficient ($\alpha = K_{adsRb}/K_{adsCs}$) was equal to 41.0 in the case of $(NH_4)_2SO_4$ packing and it was only 4.8 for NH_4Cl packing when the adsorption duration was 160 minutes. Orig. art. has: 1 figure, 2 tables and 2 formulas.

SUB CODE: 07/ SUBM DATE: 06Oct65/ ORIG REF: 001/ OTH REF: 006

Card 2/2 *sgk*

AKIMOV, A.V.; SHMANENKOVA, N.M.; LITNANS, A.Yu.

Introducing assembled shaping tools. Stan. i instr. 30, no.2:35-36 F
'59. (MIRA 12:3)
(Metal cutting tools)

... ..
... .. "On the ... of ... in Storage and" Moscow
... .. of Lenin Agricultural Academy A. A. Moscow, 1955 (Dispositions for
Degree of Candidate of Agricultural Sciences)

CC: Khizhnaya Letopis' 26, June 1955, Moscow

SHMANEV, M. N.

ZHIGLEVICH, B.P.; CHAUS, V.M.; SHMANEV, M.N.; TARASOV, D.V.

Potato storage following machine harvest. Sel'khoz mashina no.4:
21-22 Ap '57. (MIRA 10:4)

1. Institut kartofel'nogo khozyaystva (for Zhiglevich). 2. Vsesoyuznyy nauchno-issledovatel'skiy institut sel'skokhozyaystvennogo mashinostroyeniya (for Chaus, Tarasov). 3. Timiryazevskaya sel'skokhozyaystvennaya akademiya (for Shmanev).
(Potatoes--Storage)

1. V. V. V.

Dissertation: "Investigation of the Precision of Working on Vertical Milling Machines in relation to Their Strength and Accuracy." Cand Tech Sci, Moscow Order of Lenin Aviation Inst Ineni Gergo Ordzhonikidze, 31 May 54. Vechernyaya Moskva, Moscow, 20 May 54.

MO: 11 24, 12 Nov 1954

SHMANEV, V.A.

Increasing the efficiency of vertical milling machines. Stan.1
instr. 27 no.10:25-26 0 '56. (MLRA 9:12)
(Milling machines)

~~SHMANEV~~ V.A., kandidat tekhnicheskikh nauk; TSUKANOV, I.S., kandidat tekhnicheskikh nauk.

Investigating the rigidity of pedestal-type vertical milling machines. Trudy MAI no.70:57-83 '56. (MLBA 9:12)
(Milling machines)

S/123/61/000/013/007/025
A052/A101

AUTHOR: Shmanev, V. A.

TITLE: Surface position errors of center suspended parts

PERIODICAL: Referativnyy zhurnal, Mashinostroyeniye, no. 13, 1961, 47-48,
abstract 13B299 ("Tr. Kuybyshevsk. aviats. in-ta", no. 10, 1960,
17-25)

TEXT: The effect of the main factors on surface position errors was determined and the magnitude of these errors was established when turning workpieces suspended in fixed and revolving centers mounted in the tailstock of a 1616 lathe. Rod workpieces centered with a center drill were used as samples. It has been established that, when turning with a fixed center, the main effect on the irregularity of wear of the center face has the wobble of the workpiece. When a revolving center is used the surface position error of the workpiece depends mainly on the radial wobble of the taper of the revolving center in unloaded state. The studies referred to make it possible to select reasonably the design and state of the tail center, to know in advance the magnitude of the surface position error, to calculate the necessary allowance for further machining. There are 5 figures, 2 tables and 3 references.

L. Bozin

[Abstracter's note: Complete translation]
Card 1/1

L 10903-67... EWT(d)/EWT(1)/EWT(m)/EWP(w)/EWP(y)/EWP(t)/ETI/EWP(k)/EWT(h)/EWT(l)
 ACC NR: AR6022143 IJP(c) JD/EM SOURCE CODE: UR/0276/66/000/002/B086/B086 47

AUTHOR: Shmanev, V. A.; Potapova, N. I.; Bakal, V. V.

TITLE: Investigation of the state of the surface layer in milling compressor blades

SOURCE: Ref. zh. Tekhn mashinostr, Abs. 2B650

REF SOURCE: Tr. Kuybyshevsk. aviats. in-t, vyp. 20, ch. 1, 1965, 79-89

TOPIC TAGS: compressor blade, surface layer, milling, residual stress

ABSTRACT: Residual stresses were observed in the surface layers of the blades after milling leading to their eventual failure. The causes of residual stresses are nonuniform plastic deformations in the surface layer of the blades. To improve the quality of the surface layer and to increase the milling efficiency, two methods are recommended for milling airfoil using OF-31 and the 4F PL lathes: 1) by a single transverse line, or 2) by two narrow longitudinal lines. Milling with the OF-31 lathe produces compressive residual stresses $\sigma = 75 \text{ kg/mm}^2$ whose penetration depth is 50 to 200 μ . In milling with the 4F PL lathe in the upper part of the surface layer, there occur tensile residual stresses with $\sigma = 40 \text{ kg/mm}^2$, which at the depth of 20-40 μ turn into compressive residual stresses with $\sigma = 30 \text{ kg/mm}^2$ at a penetration depth of 180 μ . The degree of work hardening for the

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UDC: 621.914.1.001.5

ACC NR: AR6022143

above milling methods ranges within 8 and 30%. With increased wear of the milling cutter, the depth of work hardening and penetration of residual stresses increase; however, the maximum value of residual stresses remains approximately at the same level. The minimum tolerance for grinding an airfoil milled with a modernized lathe is 0.35 mm; with the OF-31 lathe it is 0.2 mm, and with the 4F PL lathe it is 0.15 mm. Orig. art. has: 9 figures. L. Tikhonova. Translation of abstract.

SUB CODE: 13/

Card 2/2 ^{bip}

SHMANEVA, R.N., assistant

Investigating the resistance to abrasion of napped knitted fabrics.
Tekst.prom. 21 no.9:64-65 S '61. (MIRA 14:10)

1. Leningradskiy institut sovet'skoy trgovli imeni F.Engel'sa.
(Knit goods-Testing)

SHMANEVA, R.N., assistant

Effect of laundering on the thickness and permeability to air
of knit nap fabrics. Tekst.prom. 23 no.5:29-31 My '63.
(MIRA 16:5)

1. Leningradskiy institut sovetskoy trgovli.
(Textile fabrics—Testing)

KOKOSHINSKAYA, V.I., kand.tekhn.nauk, dotsent; ~~SHMANEVA, B.N.~~ kand.tekhn.
nauk, assistant; PEREPELKINA, M.D.; SHCHERBAKOVA, M.N.;
BOGACHEVA, V.S.

Properties of half-woolen nonwoven fabrics. Tekst.prom. 25
no.11:52-56 N '65.

(MIRA 18:12)

1. Kafedra tovarovedeniya promyshlennykh tovarov Leningradskogo instituta sovetskoy trgovli imeni Engel'sa (for Kokoshinskaya).
2. Kafedra tovarovedeniya Leningradskogo instituta sovetskoy trgovli imeni Engel'sa (for Shmaneva).
3. Nachal'nik otdela netkanykh materialov Leningradskogo nauchno-issledovatel'skogo instituta tekstil'noy promyshlennosti (for Perepelkina).
4. Rukovoditel' gruppy otdela netkanykh materialov Leningradskogo nauchno-issledovatel'skogo instituta tekstil'noy promyshlennosti (for Shcherbakova).
5. Nachal'nik tekhnicheskogo otdela fabriki "Lenskno" Leningrad (for Bogacheva).

SHMANKEVICH, Andrey.

Dimethylphthalate; a story. IUn.nat. no.5:33-34 My '57. (MLRA 10:7)
(Insect baits and repellents)

SHMANKEVICH, Andrey, pisatel'

This is your work, Pioneers. IUn. nat. no.7:1-2 J1 '61.

(MIRA 14:7)

(Wildlife, Conservation of)

SHMANKEVICH, Andrey

Fish No.8. IUn. nat. no.11:15-16 0 '62.
(Fishing)

(MIRA 16:5)

SHMAN'KO, I.I.

Infrared absorption spectra of nitroaniline in acetone.

Dokl. i soob. UzhGU. Ser. fiz.-mat. i ist. nauk no.5:

40-43 '62.

(MIRA 17:9)

ANDREYEV, Mikhail Grigor'yevich; SMOL'YANINOVA, Aleksandra Mitrofanovna;
KOLEBENKOV, Sergey Semenovich; KOMAROV, Sergey Georgiyevich;
SHMANTSAR', D.N., retsenzents; DOROFYEVA, A.I., retsenzents;
PESKOVA, L.N., red.; VOROTNIKOVA, L.F., tekhn. red.

[Planning, business accounting and analysis of the administrative
operations of a railroad car depot]Planirovaniye, khozraschet i
analiz khozrastvennoi deiatel'nosti vagonnogo depo. Moskva,
Transzheldorizdat, 1962. 149 p. (MIRA 15:12)
(Railroads--Finance)

Category : USSR/Radiophysics - Application of radiophysical methods

I-12

Abs Jour : Ref Zhur - Fizika, No 1, 1957, No 1978

Author : Salomonovich, A.Ye., Shmaonov, T.A.

Title : Concerning the Problem of the Choice of the Modulation Frequency in a Modulation Radiometer

Orig Pub : Tr. 5-go soveshchaniya po vopr. kosmogonii. 1955. M., AN SSSR, 1956, 127-129 diskus. 130

Abstract : The maximum value of the modulation frequency is determined by the width of the anomalous noise spectrum at the output of the second detector of the receiver. A spectrum analyzer for the investigation of this spectrum was built, using a heterodyne circuit with a quartz filter at the intermediate frequency. The resolving power of the analyzer is 6 cycles, the range of the investigated frequencies is from 10 to 1000 cycles. The investigation was made on a wide-band 3.2-meter superheterodyne receiver with a crystal mixer and a klystron heterodyne. The i-f amplifier had a bandwidth of 15 Mc at 60 Mc and employed 6Zh1P and 6Zh2P tubes (a total of 18). The overall gain was 10^6 . Measurements have shown that when the set was fed from batteries, no anomalous spectrum was observed above 30 cycles. When the receiver was fed from the power line, regardless of the satisfactory quality of the stabilized rectifiers and the good filtering, the anomalous spectrum has bumps at 50, 100, and 150 cycles.

Card : 1/1

SHIMACNOV, T. A. Doc Cand Phys-Math Sci -- (diss) "Absolute measurements of low effective temperatures of ~~the~~ fluctuating^{on} radioemission." Mos, 1957. 10 pp 20 cm. (Academy of Sciences USSR. Inst of Radio Engineering and Electronics), 140 copies (KL, 21-57, 98)

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SHMAONOV, T.A.

Absolute measurements of effective temperature of radiation with low equivalent temperatures. Prib. i tekhn. eksp. no.1:83-86 Ja-F '57.

(MLRA 10:6)

1. Institut radiotekhniki i elektroniki Akademii nauk SSSR.
(Radio waves--Measurement)

SOV/109-3-7-18/23

AUTHORS: Vakhnin, V. M. and Shmaonov, T. A.

TITLE: Reduction of the Heating Time in Indirectly Heated Cathodes
(Sokrashcheniye vremeni progrevka katodov s kosvennym podogrevom)

PERIODICAL: Radiotekhnika i elektronika, 1958, Vol 3, Nr 7,
pp 966-967 (USSR)

ABSTRACT: The process of heating the cathodes in thermionic tubes was speeded-up by switching-in heater voltages up to 3 times higher than the nominal supply. The duration of the over-voltage was of the order of 3-4 sec, after which the tubes were supplied with the normal current. It was found that by this method the tubes were fully switched on in about 15 to 20 sec. Some of the experimental results are illustrated in the oscillograms of Figs.1 and 2. Curve 1 in Fig.2 shows the heater voltage (12.6 and 6.3 V) as a function of time, Curve 2 represents the heater current and Curve 3 shows the anode current. Fig.2 shows the behaviour of a multivibrator and an audio-oscillator upon switching on the heater over-voltage and the normal voltage. It was found that the normal Soviet receiving tubes could be switched on (in the above manner) up to 1500 times without impairing their performance.

Card 1/2 The majority of the tubes could stand 15 000 switchings on.

SOV/109-3-7-18/23

Reduction of the Heating Time in Indirectly Heated Cathodes

but some developed heater-cathode shorts after 5000 operations. The authors express their thanks to O. K. Dimitriyev and V. N. Orlov for carrying out the experiments.

SUBMITTED: September 5, 1957.

1. Cathodes (Electron tubes)--Heating 2. Electron tube heaters--Performance

Card 2/2

MOROZOV, V.K., red.; POL', V.G., red.; SHMAONOV, T.A., red.; KRYLOV,
M.V., inzhener-podpolkovnik, red.; STREL'NIKOVA, M.A.,
tekhn.red.

[Transmission of measurements by radio from rockets and
missiles; translations on telemetering from foreign journals]
Tekhnika peredachi izmerenii po radio s raket i snariadov;
sbornik perevodov inostrannykh zhurnal'nykh statei po radio-
telemetrii. Moskva, Voen.izd-vo M-va obor.SSSR, 1959. 126 p.
(MIRA 13:1)

(Telemetering)

TETERICH, Nikolay Mikhaylovich; GEEKER, Ivan Romanovich; SHMAONOV,
Tigran Aramovich; TYAGUNOVA, Z.I., red.; AKHLAMOV, S.N.,
tekhn.red.

[Italian-Russian dictionary of radio and electronics]
Ital'iansko-russkii slovar' po radio i elektronike. Moskva,
Gos.izd-vo fiziko-matem.lit-ry, 1959. 447 p. (MIRA 12:12)
(Italian language--Dictionaries--Russian)
(Radio--Dictionaries)
(Electronics--Dictionaries)

ZINGER, Dzh.[Singer, J.R.],prof.; ZUYEV, V.S.[translator]; KARLOV, N.V.,
[translator]; SHMAONOV, T.A. [translator]; FUNKIN, F.V., red.
POPOV, R.Yu., red.; GRIBOVA, M.P., tekhn. red.

[Masers; solid state generators and amplifiers] Mazery; kvanto-
vye usiliteli i generatory. Pod red.F.V.Bunkina, Moskva, Izd-vo
inostr. lit-ry, 1961. 206 p. (MIRA 15:1)
(Masers)

SHAVLOV, A.[Schawlow,A.]; FOGEL', S.[Fogel,S.]; DALBERDZHER, L.
[Dulberger, L.]; KORNIYENKO, L.S.[translator]; ZVEREV, G.M.
[translator]; MARKOV, V.N.[translator]; SHMAONOV, T.A., red.;
POPOV, R.Yu., red.; IOVLEVA, K.A., tekhn. red.

[Optical masers (lasers)Opticheskie kvantovye generatory
(lazery). Moskva, Izd-vo inostr. lit-ry 1962. 114 p.
Translated from the English. (MIRA 15:11)
(Masers)

ACC NR: AP7000401

SOURCE CODE: UR/0386/66/004/009/0373/0376

AUTHOR: Vinogradov, Ye. A.; Irisova, N. A.; Mandel'shtam, T. S.; Prokhorov, A. M.; Shmaonov, T. A.

ORG: Physics Institute im. P. N. Lebedev, Academy of Sciences SSSR (Fizicheskii institut Akademii nauk SSSR)

TITLE: Resonance absorption of the V^{3+} ion in corundum at 1.21 mm wavelength

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu. Prilozheniye, v. 4, no. 9, 1966, 373-376

TOPIC TAGS: corundum, vanadium, resonance absorption, low temperature research, microwave spectroscopy, hyperfine structure

ABSTRACT: The authors report an experimental investigation of resonance absorption of the V^{3+} ion in corundum at wavelength $\lambda \sim 1.21$ mm and at liquid-helium temperature in magnetic fields from 0 to 5 kOe. The observed absorption corresponded to transitions from the lower level corresponding to the singlet state $S_z = 0$ to the levels of the higher doublet ($S_z = \pm 1$). The resonance absorption of the V^{3+} ($\sim 0.1\%$) in corundum was measured with a quasioptical feed-through spectroscope without cavity, which was constructed by the authors. The radiation source was a backward-wave tube generating an average of ~ 3 mW in the range from 0.83 to 1.35 mm. The microwave power was fed quasioptically to a sample placed in a helium cryostat via teflon windows in the cover. The helium cryostat could be placed between the poles of an electromagnet. Two series

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ACC NR: AP7000401

of measurements were made. In the first, the absorption line was investigated in different constant magnetic fields, including zero field, with the microwave-oscillator frequency continuously variable. In a zero field, two closely-spaced absorption lines were observed, corresponding to transitions from the lower singlet level of the V^{3+} ion to the levels of the doublet $S_{2'} = \pm 1$. The frequencies of the transitions from the lower level to each of the doublet levels were found to be $D_1 = (247.3 \pm 0.3)$ and $D_2 = (248.9 \pm 0.3)$ GHz, and the initial splitting of the doublet was $2E = (1.6 \pm 0.6)$ GHz. The calculated coefficient of resonance absorption of V^{3+} in corundum was $\alpha \geq 0.3 \text{ cm}^{-1}$. The second series of measurements was made at a number of fixed frequencies with the magnetic field varied from 0 to 5 kOe. The absorption line observed in this case consisted of eight hfs components. The splitting between the singlet and the doublet, equal to 247.8 GHz, coincides within the limits of experimental error with $D = (D_1 + D_2)/2$ determined in the first measurement series. When the external magnetic field tends to zero, the distance between the outermost components yields the upper limit of the initial doublet splitting, $2E < 2.1$ GHz. The authors are grateful to V. Kh. Sarkisov, director of the Corundum Laboratory of Kirivokanskiy khimkombinat, for supplying the investigated sample. Orig. art. has: 3 figures.

SUB CODE: 20/
ATD PRESS: 5107

SUBM DATE: 28Jul66/

ORIG REF: 002/

OTH REF: 005

Card 2/2

ZHARIKOV, N.M.; LEVIT, V.G.; POPOVA, M.S.; RATNER, I.O.; STANKEVICH, L.A.;
SHMAONOVA, L.M.

State of schizophrenia treatment based on data of an
outpatient study. Zhur. nevr. i psikh. 64 no.6:911-918 '64.
(MIRA 17:12)

1. Institut psikhiiatrii AMN SSSR, Moskva.

1. SHM/RAKOV, G. Ye.
2. USSR (600)
4. Sulfuric Acid
7. Experiments demonstrating the preparation of sulfuric acid. Khim.v shkole no. 5, 1952

9. Monthly List of Russian Accessions, Library of Congress, February 1953. Unclassified.

IN 1957, G. 30.

AKHMET, A. Ye.: "A study of the development of varieties of vegetable crops and some methods of cultivating them under the conditions of northern Turkmenia." All-Union Order of Lenin Academy of Agricultural Sciences named V. I. Lenin. All-Union Institute of Plant Breeding. Leningrad, 1956.
(Dissertation for the Degree of Candidate in Agricultural Sciences).

11: Knizhnaya letopis', No 23, 1956

USSR/Cultivated Plants - Potatoes. Vegetables. Melons. etc.

M.

Abs Jour : Ref Zhur - Biol., No 4, 1958, 15637

Author : G.Ye. Shmarayev

Inst : Agricultural Institute of the Academy of Sciences,
Turkmen SSR.

Title : The Results of Tomato, Pepper and Eggplant Variety
Studies in Tashauzskaya Oblast'.
(Rezultaty sortoizucheniya tomatov, pertsev i baklazha-
nov v Tashauzskoy oblasti).

Orig Pub : Tr. In-ta zemledeliya AN Turkmen SSR, 1957, 1, 141-156

Abstract : At the Tashauzskaya Experimental Station of the Academy
of Sciences Turkmen SSR the variety testing was made of
100 kinds of tomatoes, peppers and eggplants on two
soil species both in seedling culture and with the seeds
sown directly in the ground, with various times of

Card 1/2

67

SHMARAYEV, G.Ye., kand.sel'skokhoz.nauk

Parent material and methods of growing tomatoes in the lower reaches
of Amu-Darya. Trudy po prikl. bot., gen. i sel. 32 no.3:280-290
'59. (MIRA 14:5)

(Amu-Darya Valley--Tomatoes)

SHMARAYEV, G.Ye., kand.sel'skokhoz,nauk

Growing bulb onions in the lower reaches of Amu-Darya. Trudy po
prikl. bot., gen. i sel. 32 no.3:291-298 '59. (MIRA 14:5)
(Amu-Darya Valley--Onions)

SHMARAYEV, T.M.; SILIN, A.A.

Increase the efficiency of gas safety crews. Bezop.truda v prom.
6 no.4:11-12 Ap '62. (MIRA 15:5)

1. Chernikovskiy neftepererabatyvayushchiy zavod.
(Petroleum refineries--Safety measures)

VATSEK, A. [Vacek, A.]; SHMARDOVA, G.

Disorders of basal metabolism adaptation during roentgen
irradiation in rats. Med.rad. 4 no.6:27-32 Je '59.

(MIRA 12:8)

1. Iz Instituta biofiziki Chekhoslovatskoy akademii nauk (dir. -
chlen-korrespondent Chekhoslovatskoy akademii nauk doktor
biologicheskikh nauk prof.F.Gerchik.

(BASAL METABOLISM, eff. of radiations,
x-rays in rats (Rus))

(ROENTGEN RAYS, eff.
on basal metab. in rats (Rus))

SHMAREV, A.T.

Basic trends in the development of the gas industry of the U.S.S.R.
in the sixth five-year plan. Gaz.prom. no.5:1-5 My '57. (MLRA 10:5)

1. Nachal'nik Glavgaza SSSR.
(Gas manufacture and works)

SHMAREV, A.T., inzh.; YATROV, S.N., inzh.; GALUSTOV, S.G., inzh.

Use of hydraulic rupture of layers in the underground gasification
of solid fuels. Mekh.trud.rab. 11 no.9:22-24 S '57. (MIRA 10:11)
(Gasification of coal)

SHAPIREV, A. T.

11(4)

PHASE I BOOK EXPLOITATION

SOV/1868

Nauchno-tekhnicheskoye obshchestvo neftyanoy promyshlennosti

Puti razvitiya gazovoy promyshlennosti SSSR; materialy Vsesoyuznogo soveshchaniya
(Trends in the Development of the Gas Industry in the USSR; Materials Presented
at the All-Union Conference) Moscow, Gostoptekhnizdat, 1958. 432 p. 3,000
copies printed.

Eds: A.D. Brents, B.S. Itsikson, P.G. Komissarov, Ye.A. Krems, V.I. Popov,
V.N. Raaben, N.I. Ryabtsev, P.A. Tesnar, A.S. Pal'kevich; Exec. Eds.:
N.I. Stepanchenko and M.M. Novikova; Tech. Ed.: E.A. Mukhina;
Editorial Board: M.V. Sidorenko (Chief Ed.), K.S. Zarembo, Ye.A. Krems,
V.N. Raaben, and N.I. Ryabtsev.

PURPOSE: The book is intended for specialists engaged in the production and
gathering of natural gas, the extraction of gas from coal and shale, the con-
struction and operation of trunk gas pipelines, gas supply to cities, and the
processing of gas.

Card 1/11

Trends in the Development of the Gas (Cont.)

SOV/1868

COVERAGE: The authors review the basic trends in the development of the USSR gas industry, the prospecting and exploration of new gas deposits, the gasification of solid fuels, the gathering and utilization of natural gas, the automation of gas field operations, the exploitation of gas wells, and ways to increase output. They further discuss the processing of natural gas with application of refrigeration, the experience gained in the laying and operating of trunk gas pipelines, the automation of gas pipeline operation, and underground gas storage facilities. There are no references.

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SHMAREV, A. T. IOANNESYAN, R. A., TREBIN, F. A., GUSMAN, M. I., OSTROVSKIY, A. P.,
TAGIYEV, E. I., TITKOV, N. I., GELFGAT, Y. A., MININ, A. A., and SHASHIN, V. D.

"Progress of Turbodrilling and Studying New Methods of Drilling Wells
in the USSR."

Report, ^{to be} submitted at the Fifth World Petroleum Congress, 30 May -
5 June 1959. New York City.

SEMAREV, A.T.

The Tatar A.S.S.R. is one of the largest oil regions in our country.
Neft. khoz. 37 no.1:23-30 Ja '59. (MIRA 12:3)

1.Predsdatel' Soveta narodnogo khozyaystva Tatarskogo
ekonomicheskogo administrativnogo rayona.
(TatarA.S.S.R.--Oil fields--Production methods)

SHMAREV, A. T.

Tatar petroleum workers are striving for the fulfillment at the seven-year plan. Neft. khoz. 38.no.1:12-16 Ja '60.

(MIRA 13:7)

1. Predsedatel' Tatarskogo sovnarkhoza.

(Tatar A.S.S.R.--Petroleum industry)

SHMAREV, A.T.

Means for increasing the effectiveness of the operations of
drilling departments. Neft. khoz. 40 no.5: 1-5. My '62.(MIRA 15:9)
(Oil well drilling)

GALONSKIY, P.P.; KOVALENKO, K.I.; KUVYKIN, S.I.; MINGAREYEV, R.Sh.;
MURALENKO, V.I.; OBNOSOV, A.D.; SHASHIN, V.D.; SHMAREV, A.T.

Volga-Ural region is one of the largest petroleum bases of
the country. Neft. khoz. 42 no.9/10:56-64 S-O '64.

(MIRA 17:12)

SHUGARGANER, Ye.

Reducing labor in control and inspection operations. Sots. trud no.7:
127-130 J1 '57. (MLRA 10:8)

1. Starshiy nauchnyy sotrudnik Tsentral'noy nauchno-issledovatel'-
skoy laboratorii Tekstil'no-galantereynoy promyshlennosti.
(Textile industry) (Production control)

GORODETSKIY, N.I., kand. ekonom. nauk; YEREMOV, Ya.Ye.; SHMARGONER, Ye.A.

Growth of labor productivity in the coking plants of the
Dnieper Economic Council. Koks i khim. no.1:61-64 '64.
(MIRA 17:2)

1. Dnepropetrovskiy khimiko-tehnologicheskii institut
(for Gorodetskiy, Yermov). 2. Dnepropetrovskiy koksokhimi-
cheskiy zavod (for Shmargoner).

SHMARGANER, Ye.M.

Reducing the input of work of auxiliary workers. Leg. prom. 18 no.2:
6-7 F '58. (MIRA 11:2)

(Industrial management)

SHMARGANER, Yeva Markovna; ZORIN, P.D., nauchnyy red.; GRACHEVA, A.V.,
red.; SHAPENKOVA, T.A., tekhn. red.

[Maintenance of lace machines] Obsluzhivanie kruzhevnoi ma-
shiny. Moskva, Izd-vo nauchno-tekhn. lit-ry RSFSR, 1961. 156 p.
(MIRA 15:3)

1. Zamestitel' nachal'nika kruzhevnogo tsekha Moskovskoy kru-
zhevnoy i gardinno-tyulevoy fabriki imeni Tel'mana (for Zorin).
(Knitting machines) (Lace and lace making)

SHMARGANER, Ye.M., starshiy nauchnyy sotrudnik

Experiment of the textile and dry goods industry in the use of the methodology for determining the degree of labor mechanization.
Tekst.prom. 23 no.8:11-15 Ag '63. (MIRA 16:9)

1. TSentral'naya nauchno-issledovatel'skaya laboratoriya
tekstil'no-galantereynoy promyshlennosti (TsNIL TGP).
(Textile industry--Management)

SHMARGON³, Ye.M.

Diagnosis of the nonexpedability of the capsule of the castor plant
Ricinus communis based on the morphology of buds. Dep. AN URSR no.1:
63-66 '49. (MLRA 9:9)

1. Botanichniy sad AN URSR. Predstaviv diysniy chlen AN URSR N.N.
Grishko.

(Castor-oil plant)

SHMARGON', Ye.N. [Shmarhon', I.E.N.]

Embryological processes in the apple tree (*Malus domestica*
Borkh). Ukr. bot. zhur. 21 no.3:12-19 '64 (MIRA 17:7)

1. Institut botaniki AN UkrSSR, otdel tsitologii i embriologii.

SHMARGUNOV, K. N.

"Automatic Commutator Controls for Trolleys," Elektrichestvo, No.7, 1948.

Dir., Leningrad Polytech. Inst.

SHMARGUNOV, K. E., PROF

PA 40/49T22

USSR/Electricity
Training

Feb 49

"The Electromechanical Faculty of the Leningrad Polytechnical Institute (ment M. I. Kalinin (on its Fiftieth Anniversary)," Prof K. E. Shmargunov, Dir, Leningrad Polytech Inst (ment M. I. Kalinin, Prof L. P. Neyman, Dean, Electro-mech Faculty, Dr Tech Sci, 5 pp

"Elektrichestvo" No 2

Leningrad Polytech Inst has seven divisions: electromechanical, mechanical physics, mechanical machine construction, metallurgy, engineering

40/49T22

USSR/Electricity (Contd)

Feb 49

construction, power machine construction, and engineering economics. M. A. Shatelen is electro-mechanical faculty head. Lists schools within electromechanical division, along with their directors. Submitted 10 Dec 48.

40/49T22

SHMARIN, M.

AID - P-131

Subject : USSR/Miscellaneous
Card : 1/1
Author : Shmarin, M., Major
Title : American Preacher of Atomic War
Periodical : Air Force Herald, 4, 73 - 74, Ap 1954
Abstract : Critical review of a book "Total Atomic Defense",
written by Kindall, Sylvian, G., New York, 1952.
Institution : None
Submitted : No date

SHMARINOV, Aleksey Dement'yevich; KISELEV, Ya., red.; SHLENSKAYA, M.,
tekhn. red.

[From Rome to Florence] Ot Rima do Florentsii. Moskva, Izd-vo
"Molodaia gvardiia," 1963. 86 p. (MIRA 16:6)
(Italy—Description and travel)

L 40796-65 EPA(s)-2/EWT(m)/EPF(n)-2/EWG(m)/EWP(t)/EWP(b) Pt-10/Pu-4
IJP(s) RWH/JD/JG/RM
ACCESSION NR: AP4047872 S/0279/64/000/005/0098/0100 44
B

AUTHOR: Suvorovskaya, N. A. (Moscow); Shikhova, V. V. (Moscow); Shmarinova,
I. A. (Moscow)

TITLE: Separation of lithium from alkaline and alkaline-earth metals by method
of ion exchange 1

SOURCE: AN SSSR. Izvestiya. Metallurgiya i gornoye delo, no. 5, 1964, 98-100

TOPIC TAGS: ion exchange sorption cycle, metal separation, lithium, alkaline
earth metal, alkaline

ABSTRACT: The authors discuss the separation of Li from alkaline ions and Mg
in a sorption cycle which proved convenient and effective. For that purpose, they
used "RF" cationite that contains monooxyphenyl and dioxyphenyl phosphate groups
and is obtained by the polycondensation of monoresorcin phosphate with formalde-
hyde. A collective sorption of potassium, sodium, magnesium and lithium ions
occured at a filtering rate of 1 ml/min. An optimal filtering rate of 2 ml/min
secures complete separation of Li. The chemical affinity of the alkaline metal
ions being separated to the "RF" ionite grows in the series Li Na K. Orig. art.

Card 1/2 27-27

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ACCESSION NR: AP4047872

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ASSOCIATION: None

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SUB CODE: MM, GC

NR REF SOV: 004

OTHER: 001

508
Card 2/2

SUVOROVSKAYA, N.A. (Moskva); SHIKHOVA, V.V. (Moskva); SHMARINOVA, I.A. (Moskva)

Separating lithium from alkali and alkali earth metals by the ion
exchange method. Izv. AN SSSR. Met. i gor. delo no.5:98-100 S-0 '64.
(MIRA 18:1)

GOLOVIN, Ye.A.; SIMARIOVICH, Ye.M.

Stratigraphy of Paleogene sediments in the northwestern slope
of the Chatkal Range. Uzb.geol.zhur. no.3:36-42 '60.
(MIRA 13:11)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut mineral'nogo
syr'ya.
(Chatkal Range--Geology, Stratigraphic)

BATULIN, S.G.; GOLOVIN, Ye.A.; ZELENKOVA, O.I.; KASHIRTSEVA, M.F.;
KOMAROVA, G.V.; KONDRAT'YEVA, I.A.; LISITSIN, A.K.;
PEREL'MAN, A.I., doktor geol.-miner. nauk; SIDEL'NIKOVA, V.D.;
CHERNIKOV, A.A.; SHMARIOVICH, Ye.M.; MURADOVA, A.A., red.

[Exogenetic epigene uranium deposits; conditions governing
their formation] Ekzogennye epigeneticheskie mestorozhdeniia
urana; usloviia obrazovaniia. [By] S.G.Batulin i dr. Moskva,
Atomizdat, 1965. 323 p. (MIRA 18:5)

15
7
L 50180-65 EPA(s)-2 /EWT(m)/EPF(n)-2/T/EWP(t)/EMP(b)/EWA(c) Pu-4 47
ISP(c) WWH/ES/JD/WW/JG 34
AM5014982 BOOK EXPLOITATION UR/553.061:546.79 B+1
Batulin, S. G.; Golovin, YE. A.; Zelenova, O. I.; Kashirtseva, M. V.;
Komarova, G. V.; Kondrat'yeva, I. A.; Lisitsin, A. K.; Perel'man,
A. I.; Sindel'nikova, V. D.; Chernikov, A. A.; Shmariovich, YE. M.
Exogenous epigenetic deposits of uranium; formation conditions
(Ekzonennyye epigeneticheskiye mestorozhdeniya urana; usloviya
obrazovaniya). Moscow, Atomizdat, 1965. 321 p. illus., biblio.
Errata slip inserted. 1100 copies printed.
TOPIC TAGS: deposit formation, epigenetic theory, exodiagenetic
deposit, surface uranium accumulation, uranium bituminous deposit,
uranium deposit, uranium, nuclear fuel. 19
PURPOSE AND COVERAGE: This book is intended for readers specializing
in the geology of ore deposits, in particular for those concerned
with atomic raw materials, and also for students of higher-educ-
ation institutions. In the book, for the first time in Soviet and
foreign literatures, the epigenetic theory of uranium-deposit
formation is expounded. Many Soviet and foreign source materials
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have been used in this book, and some of the investigations carried out by the present authors are published in this book for the first time. Several names of Soviet scientists working in this field are mentioned. V. A. Uspenskiy collaborated on Ch. X, and M. A. Viselkina on Ch. III. The authors thank A. A. Saukov, deceased, Corresponding Member Academy of Sciences USSR, and F. I. Vol'fson, D. G. Sapozhnikov, V. I. Gerasimovskiy, M. F. Stralkin, G. S. Gritsanyenko, and I. P. Kushnarev, Doctors of Geologico-Mineralogic Sciences; V. I. Danchev, Candidate of Geologico-Mineralogic Sciences, and N. A. Volokovykh. There are about 12 pages of references of which about 3/4 are Soviet.

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AM5014982

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SUBMITTED: 04Feb65

NO REF SOV: 188

OTHER: 118

Card 4/4

1954. . . .

299 Zhurnal Tsvetnogo i Obshchego Televideniya. M., "Sov. Nauka", 1954.
304S. 3 ill.; 23 SM. 12r. 70 K V Per.--Bibliogr: S. 194-27--(54-543 1) P.
621.397.5 t (016.3)

SP: Knizhnaya, letopis Vol. 1, 1955

S/080/63/036/002/014/019
D403/D307

AUTHORS: Sobolev, V. M., Shcherbakova, N. V. and Shmarlin, V. S.

TITLE: Formation of cyclopentadiene during the preparation of isoprene by 2-stage dehydrogenation of isopentane

PERIODICAL: Zhurnal prikladnoy khimii, v.36, no. 2, 1963, 428-430

TEXT: The authors studied (1) the formation of cyclopentadiene (I) in the dehydrogenation of isopentane through isoamylene to isoprene, and (2) the separation of isopentane-isoamylene and isoamylene-isoprene fraction. The K-5 and K-16 (K-5 and K-16) catalysts were used for the 1st and 2nd stage respectively for the dehydrogenation reactions. Cyclopentadiene was found to form during both stages. It is suggested that I forms by the following steps: (a) isopentane isomerizes to n-pentane, some of which is then cyclized to cyclopentane and some dehydrogenated to $\text{CH}_3(\text{CH}_2)_2\text{CH}=\text{CH}_2$; (b) the latter cyclizes to $\text{CH}_3(\text{CH}_2)_2\text{CH}=\text{CH}$ (II) and dehydrogenates to $\text{CH}_3\cdot\text{CH}=\text{CH}\cdot\text{CH}=\text{CH}_2$; cyclopentane also dehydrogenates to II; (c)

Gard 1/2

Formation of cyclopentadiene ...

S/080/63/036/002/014/019
D403/D307

product II finally dehydrogenates to I, which is also obtained by the cyclization of $\text{CH}_3\text{CH}=\text{CH}\cdot\text{CH}=\text{CH}_2$ with loss of H_2 . During the separation of isopentane-isoamylene mixtures, I is found in isoamylene. During the separation of isoamylene-isoprene mixtures, I passes into the isoprene. There is 1 table.

ASSOCIATION: Nauchno-issledovatel'skiy institut monomeroov dlya SK
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I. 6613-65 FMT(m)/RPF(s)/EXP(j)/T Ps-4/Pr-4 RM

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AUTHOR: Shcherbakova, N. V.; Sobolev, V. M.; Shmarlin, V. S.

TITLE: Purifying isoprene with aqueous maleic acid solutions

SOURCE: Khimicheskaya promyshlennost', no. 6, 1964, 419-420

TOPIC TAGS: isoprene, purification, cyclopentadiene removal, stereospecific polymerization, cyclopentadiene maleic acid adduct, isoprene maleic acid adduct, endomethylenetetrahydrophthalic acid, purification process

ABSTRACT: The cyclopentadiene (CPD) content in isoprene used in stereospecific polymerization must be reduced to less than 0.0005%. The method developed for purifying isoprene of CPD is based on reacting CPD with maleic acid in a heterogeneous system of an aqueous solution of maleic acid and isoprene to form 3,6-endomethylene-1,2,3,6-tetrahydrophthalic acid. Isoprene will also react, but less readily, with maleic acid to form 4-methyl-1,2,3,6-tetrahydrophthalic acid; this material accumulates in the aqueous phase. Increasing the temperature (temperature coefficient is 1.54), the concentration of the acid solution and the ratio of the water: hydrocarbon phases, increases the rate of reaction. However, the rate of

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mixing the phases has the greatest effect on the process rate; increasing the intensity of agitation reduces the time required for purification from 8.4 minutes when shaking the flask to 0.029 minutes when subjected to the action of a centrifugal pump. The CPD-maleic acid adduct is insoluble in isoprene, and at 10-40C its solubility in the aqueous maleic acid (about 25%) solution is 1-4%. The acid solution may be reused until saturated with the adduct, which may then be precipitated so that the solution may be recycled. Orig. art. has: 2 tables and 3 figures.

ASSOCIATION: None

SUBMITTED: 00

ENCL: 00

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NO REF SOV: 000

OTHER: 000

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